

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL SEARCH REPORT**  
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>349041P</b>	<b>FOR FURTHER ACTION</b>		see Form PCT/ISA/220 as well as, where applicable, item 5 below
International application No. <b>PCT/CA2004/001773</b>	International filing date ( <i>day/month/year</i> ) 04 October 2004 (04-10-2004)	(Earliest) Priority date ( <i>day/month/year</i> ) 02 October 2003 (02-10-2003)	
Applicant <b>THE UNIVERSITY OF WESTERN ONTARIO ET AL</b>			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows :

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1b

☒ as suggested by the applicant.

☐ as selected by this authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup> C08L 53/02, C08L 23/16, C08L 23/22, F42B 12/72, B29C 43/00, B29C 45/00  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup> C08L 53/02, C08L 23/16, C08L 23/22, F42B 12/72, B29C 43/00, B29C 45/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

DELPHION, STN REGISTRY, CAPLUS

thermoplastic elastomer, TPE, block copolymer, Kraton, ammunition, heavy weight filler, bismuth, copper, iron, tungsten, creep

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No(s).
Y	KIM, JEONG H. et al, Improvement in the mechanical properties of multicomponent polymer blends using dual compatibilizers, Polymer Science and Engineering 2001, Vol.85, pages 346-347 ISSN 0743-0515 the whole document	1 - 33
Y	EP 641836 A2 (GARDNER, JOHN C. et al) 8 March 1995 (1995-03-08) the whole document	1 - 33
Y	WO 01/42343 A1 (FRAUNHOFER GES.) 14 June 2001 (2001-06-14) the whole document	1 - 33
Y	WO 02/085953 A2 (BRIDGESTONE/FIRESTONE NORTH AMERICAN TIRE, LLC) 31 October 2002 (2002-10-31) the whole document	1 - 33
Y	EP 1067164 A1 (SAINT-GOBAIN PERFORMANCE PLASTICS CORP.) 10 January 2001 (2001-01-10) the whole document	1 - 33

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier application or patent but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
 "&" document member of the same patent family

Date of the actual completion of the international search

11 March 2005 (11-03-2005)

Date of mailing of the international search report

22 April 2005 (22-04-2005)

Name and mailing address of the ISA/CA  
 Canadian Intellectual Property Office  
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INTERNATIONAL SEARCH REPORT  
Information on patent family members

International application No.  
PCT/CA2004/001773

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
EP641836	08-03-1995	AU684093 B2	04-12-1997
		AU7166794 A	16-03-1995
		CA2131494 A1	07-03-1995
		GB9318437D D0	20-10-1993
		US5786416 A	28-07-1998
		ZA9406843 A	24-04-1995
WO0142343	14-06-2001	AT248886T T	15-09-2003
		DE10058692 A1	13-06-2001
		DE50003586D D1	09-10-2003
		EP1238000 A1	11-09-2002
		US6790894 B1	14-09-2004
WO02085953	31-10-2002	US6734245 B2	11-05-2004
EP1067164	10-01-2001	CA2311067 A1	08-01-2001
		DE60011346D D1	15-07-2004
		JP2001089756 A	03-04-2001
		US6391442 B1	21-05-2002
		US6764759 B2	20-07-2004
		US2004161571 A1	19-08-2004